Folsom Powerplant
Central Valley Project

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Reclamation Region: Mid-Pacific

NERC Region: Western Electricity Coordinating Council, California-Southern Nevada Power Area

PMA Service Area: Western Area Power Administration, Sierra Nevada Region

Project Authorization: Funds for construction of the initial features of the Central Valley Project were provided by the Emergency Relief Appropriation Act of 1935 (49 Stat. 115). The Secretary of the Interior authorized the project and the President approved it on December 2, 1935.

Project Purposes: The Central Valley Project, one of the Nation's major water conservation developments, extends from the Cascade Range on the north to the semiarid but fertile plains along the Kern River on the south. Initial features of the project were built primarily to protect the Central Valley from crippling water shortages and menacing floods. New project units were built to provide water and power to match the continued growth of the State.

Although developed primarily for irrigation, this multiple-purpose project also provides flood control, improves Sacramento River navigation, supplies domestic and industrial water, generates electric power, conserves fish and wildlife, creates opportunities for recreation, and enhances water quality.

Plant Location: Folsom Power plant is located on the American River in Sacramento County, California, about 20 miles northeast of Sacramento, California

Plant Purpose: Folsom is a peaking powerplant which is dedicated first to meeting the requirements of the project facilities. The remaining energy is marketed to various preference customers in northern California. This plant also provides power for the pumping plant, which supplies the local domestic water supply.

Plant Facts: Folsom Dam is a concrete gravity structure 340 feet high and 36 feet wide at the crest. The crest is 1,400 feet long. Folsom Powerplant, constructed by Reclamation, is located at the foot of Folsom Dam on the north side of the river. Water from the dam is released through three 15-foot-diameter penstocks to three generating units.

Plant History: Folsom Dam was constructed by the Corps of Engineers and upon completion was transferred to the Bureau of Reclamation for coordinated operation as an integral part of the Central Valley Project. Construction of the dam began in October 1948 and was completed in May 1955. The units were up rated in 1972.

Present Activities: Folsom Powerplant is an integral component of the Reservoir Flood Control Operation. The power plant is used to augment early flood control releases.

Future Planned Activities: The powerplant will continue to be used to augment early flood control releases from the reservoir. Continued peaking operation is planned as releases permit. Folsom is providing a larger degree of local voltage control.

Special Issues: Folsom is being increasingly relied upon to support local loads during system disturbances.

River:	American River	**Plant Type:**	Conventional
Powerhouse Type:	Above Ground	**Turbine Type:**	Francis
Original Nameplate Capacity:	162,000 kW	**Installed Capacity:**	198,720 kW
Year of Initial Operation:	1955	**Age:**	48 years
Net Generation (FY-2003):	550.3 GWh	**Rated Head:**	300 feet
Average Plant Factor (FY-2003):	31.7 percent	**Remotely Operated:**	Yes
Production Mode:	Intermediate		

Click here for information on Folsom Dam.

Click here for information on the **Central Valley Project**.

Ancillary Services

Folsom
Ancillary Services

Spinning Reserve	Yes
Non-Spinning Reserve	Yes
Replacement Reserve	Yes
Regulation/Load Following	Yes
Black Start	Yes
Voltage Support	Yes

Generators

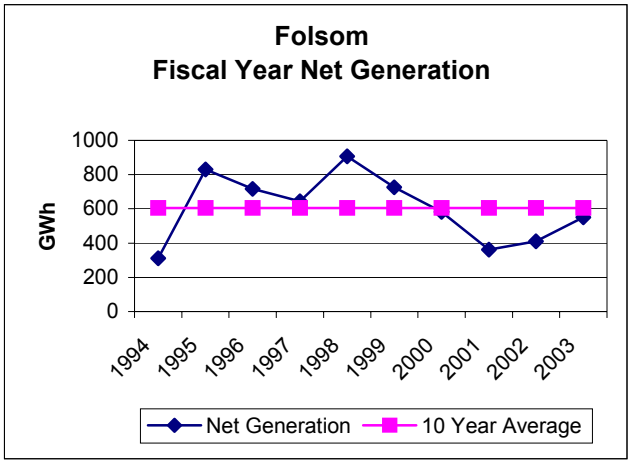
Folsom Generators

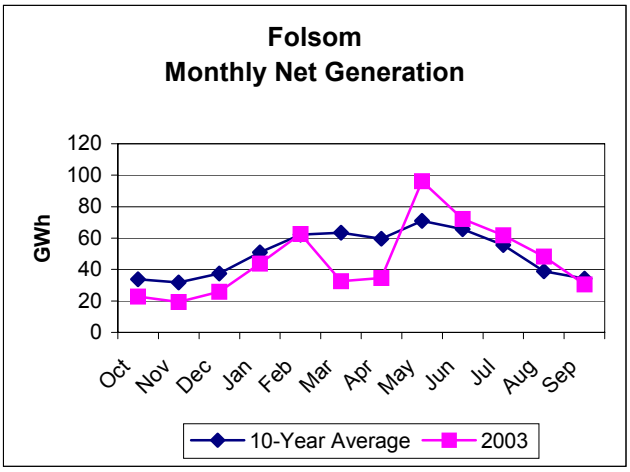
Existing Number and Capacity

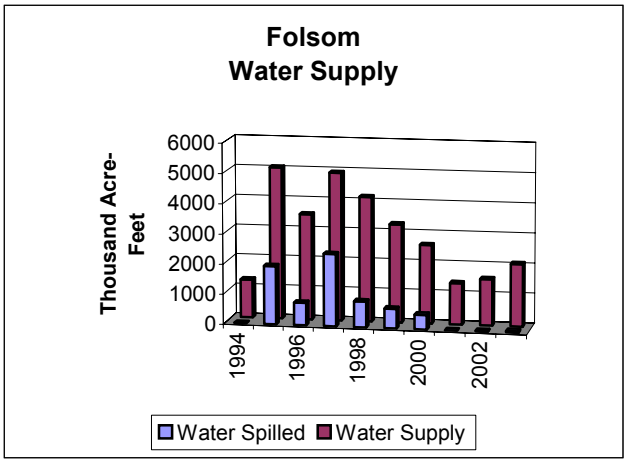
Unit #	Original Capacity (kW)	Capacity Increased (kW)	Present Capacity (kW)
1	54,000	12,240	66,240
2	54,000	12,240	66,240
3	54,000	12,240	66,240
3 Units	162,000	36,720	198,720

The maximum operational capacity is 210,000 kW

Generation

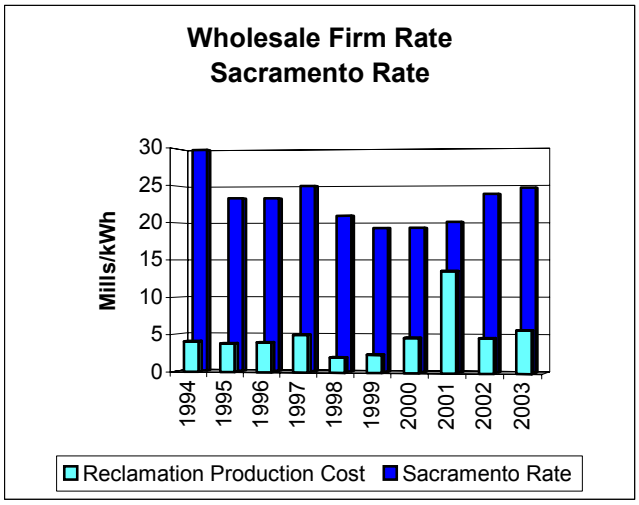

Folsom
Fiscal Year Net Generation
GWh
1000
800
600
400
200
0
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Net Generation
10 Year Average


Folsom
Monthly Net Generation
GWh
120
100
80
60
40
20
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
10-Year Average
2003

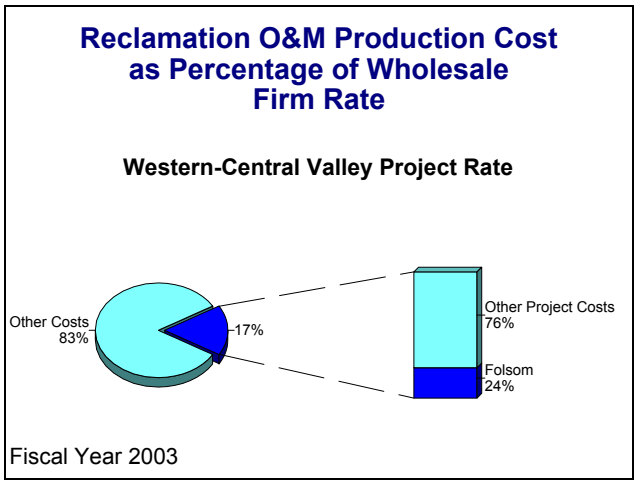

Folsom
Water Supply
Thousand Acre-Feet
6000
5000
4000
3000
2000
1000
0
1994
1996
1998
2000
2002
Water Spilled
Water Supply

Prime Laboratory Benchmarks

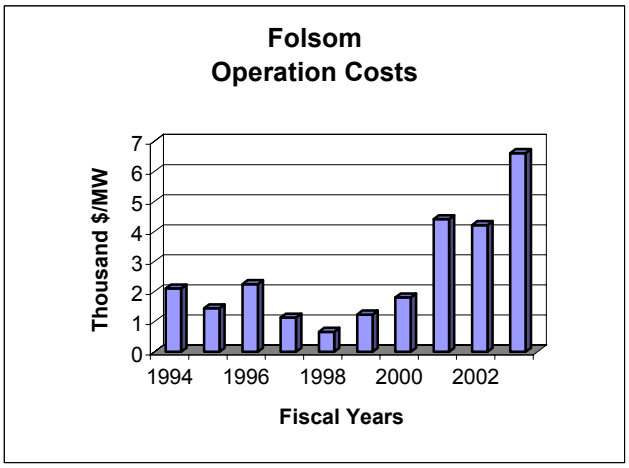
Benchmark 1
Wholesale Firm Rate

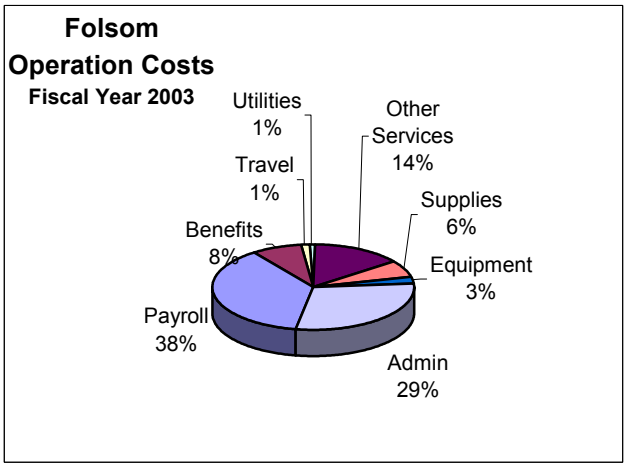


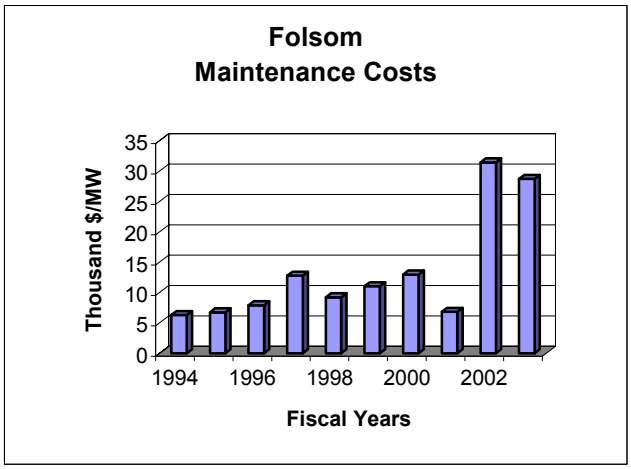
Benchmark 2
Reclamation's Production Cost as Percentage of Wholesale Firm Rate

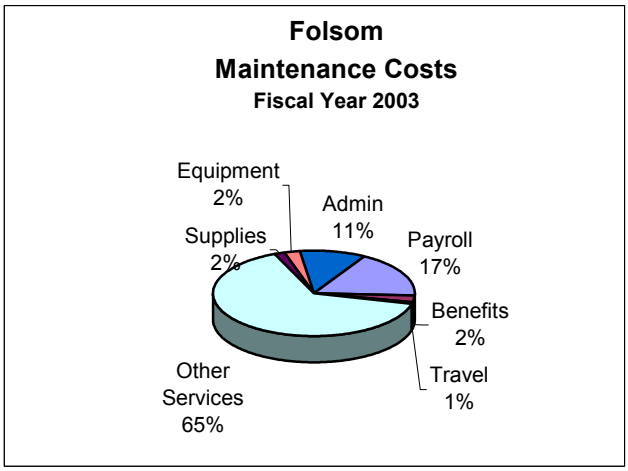


Benchmark 3
Production Cost

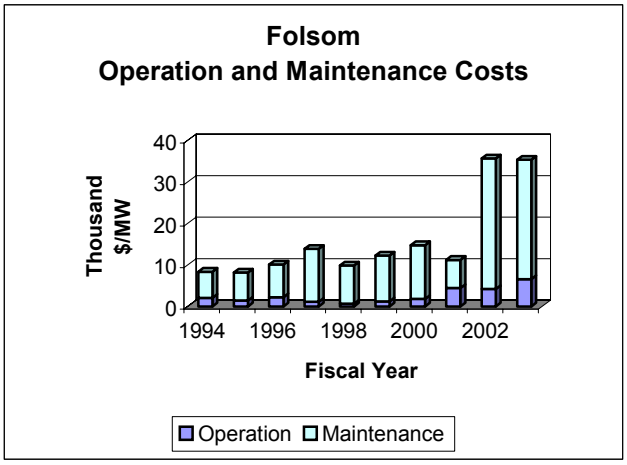


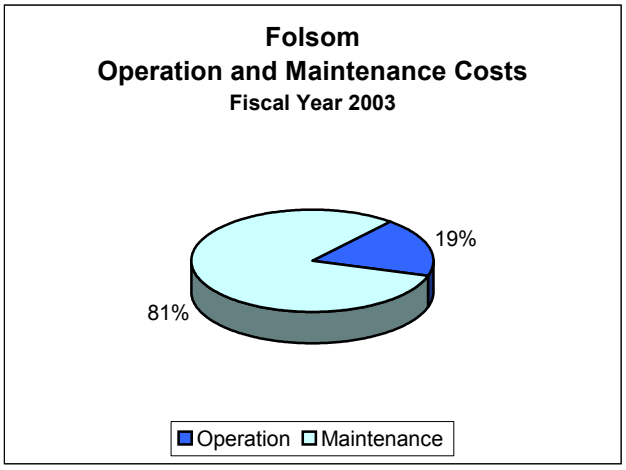


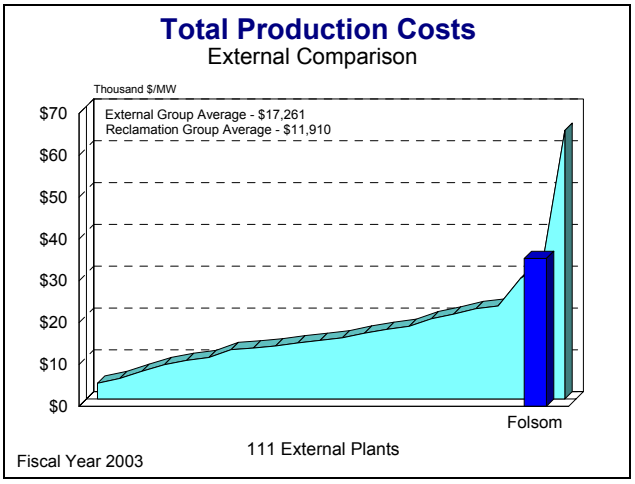


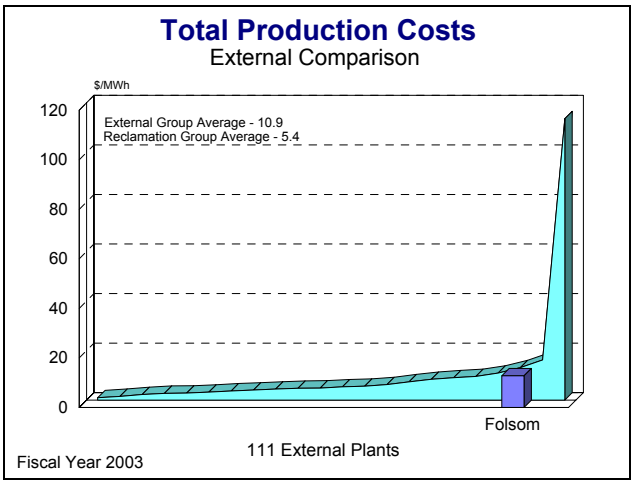


Benchmark 3
Production Cost





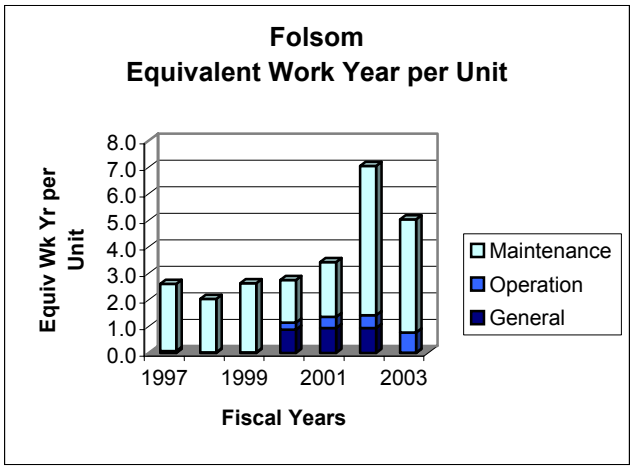


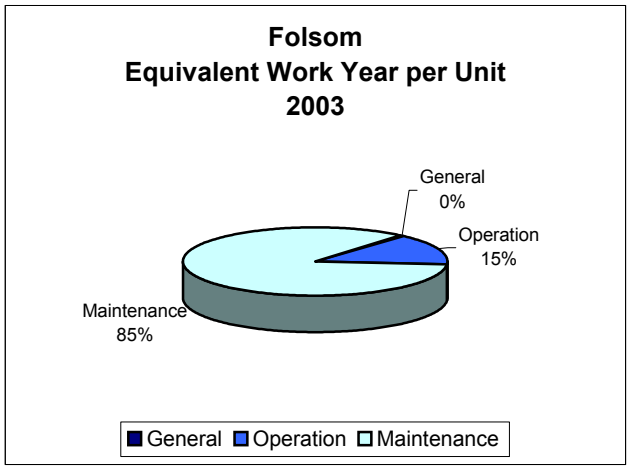


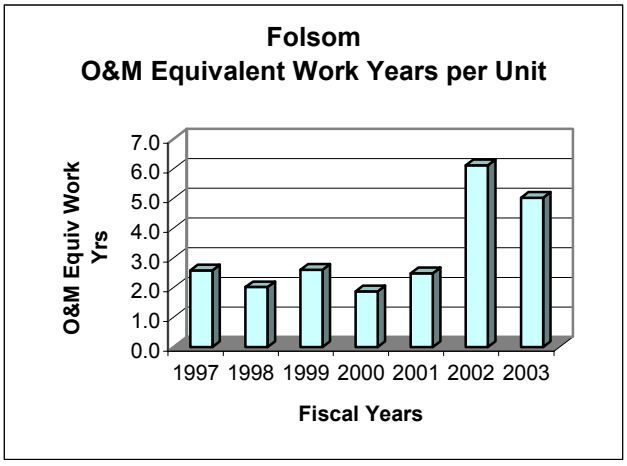
Benchmark 4
Workforce Deployment

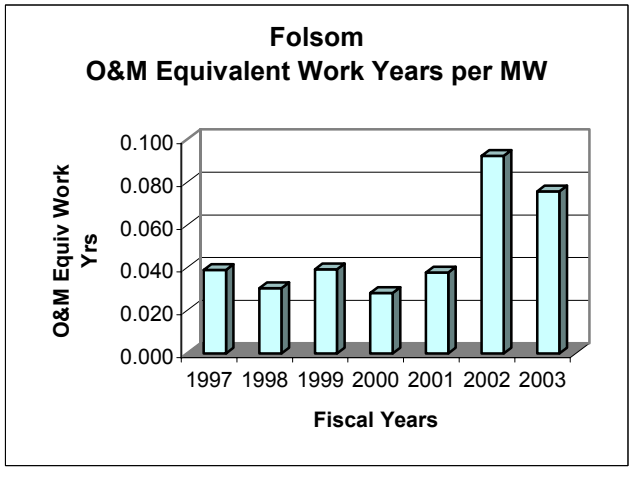
Folsom
2003 Equivalent
Work Year Levels

	Equiv Work Year Charged to Powerplant	Leave Additive	Denver and Washington Equiv Work Year Additive	Total Equiv Work Year Allocated to Powerplant	Total Equiv Work year per Generating Unit	Total Equiv Work Year per Megawatt
General	0	0	0.07	0.07	0.02	0
Operation	2.01	0.23	0	2.25	0.75	0.011
Maintenance	11.47	1.33	0	12.8	4.27	0.064
Total Staffing	13.48	1.57	0.07	15.12	5.04	0.08

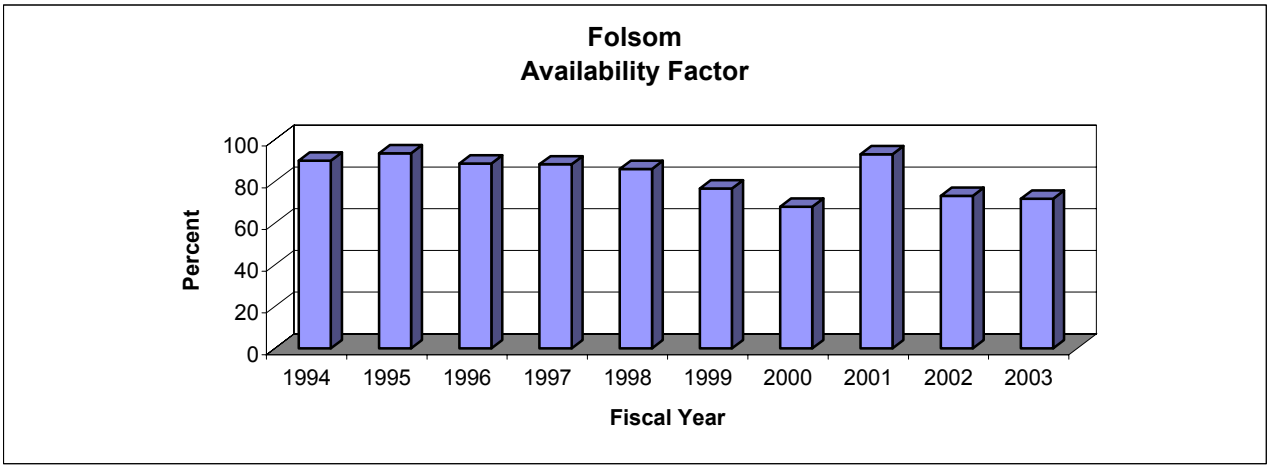




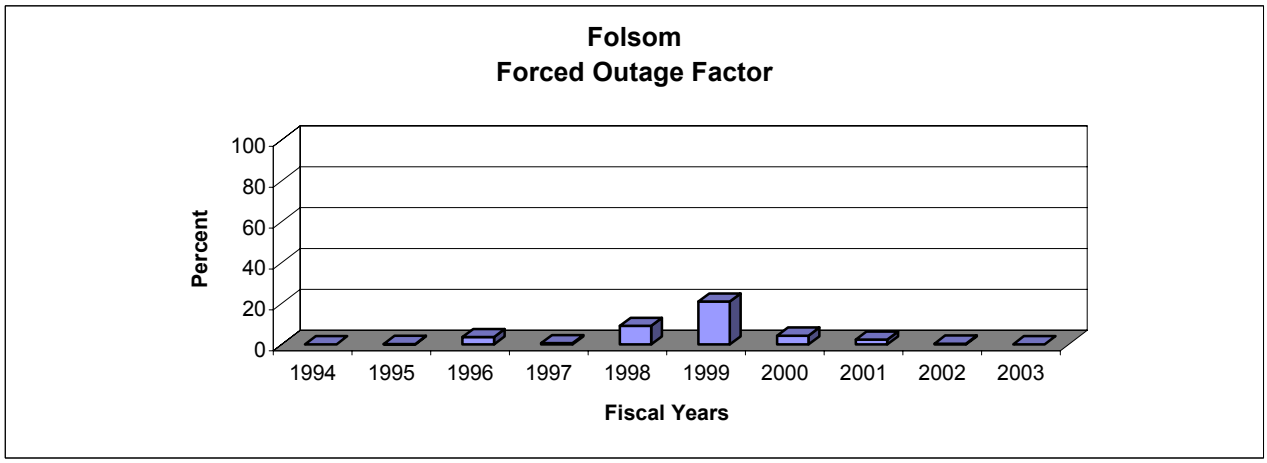




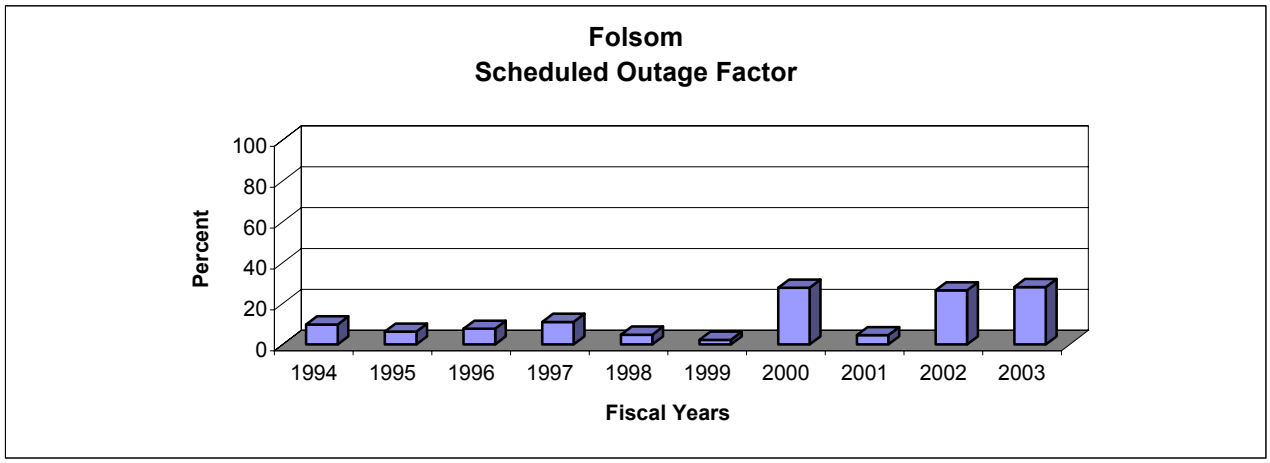
Benchmark 5
Availability Factor



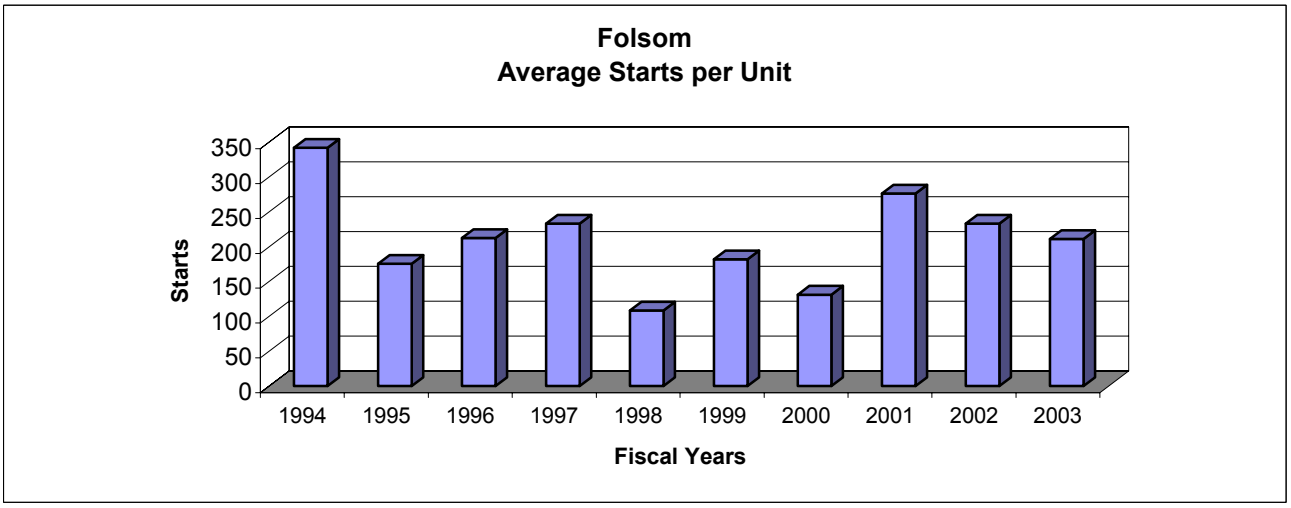
Benchmark 6
Forced Outage Factor



Benchmark 7
Scheduled Outage Factor



Starts



Benchmark Data Comparison

Fiscal Year 2003	Folsom Powerplant	Reclamation Average 100-500 MW Group	Total Reclamation Average	Industry Average	Best Performers
Wholesale Firm Rate Mills/kWh	24.6	Not Applicable	*23.1	Not Available	Not Available
Production Cost as Percentage of Wholesale Firm Rate	4.1%	Not Applicable	12.0%	Not Applicable	Not Applicable
O&M Cost $/MWh	12.8	4.5	2.7	10.9	1.1
O&M Costs $/MW	35,338	10,924	7,315	17,261	3,108
O&M Equiv Work Year per MW	0.1	0.1	0.04	Not Available	0.01
Availability Factor	71.8	87.6	83.6	**88.9	99.1
Forced Outage Factor	0.1	0.8	1.5	**2.4	0.0
Scheduled Outage Factor	28.1	11.7	14.9	**8.7	0.0

*Weighted by Net Generation
**2002 NERC Average